

SWAINE et al
Appl. No. 10/635,916
February 17, 2006

BEST AVAILABLE COPY

AMENDMENTS TO THE CLAIMS:

Please cancel without prejudice claims 6 and 19 and amend claims 1, 15 and 28 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) Apparatus for processing data, said apparatus comprising
at least two trace data sources, each of said at least two trace data sources generating a
respective trace data stream;
a reference timestamp generator for generating reference timestamp data;
a trace data annotator for outputting said trace data streams together with said reference
timestamp data associated with a plurality of points within said respective trace data streams to
provide temporal correlation between said at least two trace data sources; and
at least two local clock sources associated with respective ones of said at least two trace
data sources, each of said at least two local clock sources generates local timestamp data
associated with said plurality of points in said trace data streams.
2. (original) Apparatus as claimed in claim 1, wherein one of said trace data sources also
serves as said reference timestamp generator.
3. (previously presented) An apparatus as claimed in claim 1, wherein said trace data
annotator outputs said trace data streams and a distinct data stream comprising said reference
timestamp data.

SWAINE et al
Appl. No. 10/635,916
February 17, 2006

4. (previously presented) An apparatus as claimed in claim 1, wherein said trace data annotator inserts said reference timestamp data into at least one of said trace data streams to generate a respective individual annotated trace data stream.

5. (original) An apparatus according to claim 1, wherein said trace data streams from said at least two trace data sources are locally cycle-accurate trace data streams.

6. (cancelled).

7. (previously presented) An apparatus as claimed in claim 6, wherein said trace data annotator outputs said local timestamp data together with said reference timestamp data and said trace data streams.

8. (previously presented) An apparatus as claimed in claim 1, wherein at least one of said at least two trace data sources comprises a marker packet generator for generating a marker packet at a marker point in the corresponding trace data stream and to issue a request to said reference timestamp generator to output reference timestamp data associated with said marker point.

9. (previously presented) An apparatus as claimed in claim 8, wherein said marker packet generator includes in said marker packet a trace source identifying signal that identifies the associated trace data source.

SWAINE et al
Appl. No. 10/635,916
February 17, 2006

10. (previously presented) An apparatus as claimed in claim 8, wherein said marker packet generator includes in said marker packet local timestamp data from the respective trace data source and corresponding to said marker point.

11. (previously presented) An apparatus according to claim 1, comprising a combiner for combining said trace data streams and said reference timestamp data for output to a trace data stream processor.

12. (original) An apparatus according to claim 1, wherein at least one of said at least two trace data sources comprises a software-triggered trace data generator such that a software-controlled write to one or more predetermined memory locations triggers generation of a trace data stream by said software-triggered trace data generator.

13. (original) An apparatus according to claim 1, wherein at least one of said at least two trace data sources includes:

- a processor core;
- a digital signal processor; and
- a memory bus monitor.

14. (original) An apparatus as claimed in claim 1, wherein said apparatus comprises an integrated circuit.

SWAINE et al
Appl. No. 10/635,916
February 17, 2006

BEST AVAILABLE COPY

15. (currently amended) A method of processing data, said method comprising the steps of:

generating at least two trace data streams from respective trace data sources;

generating reference timestamp data associated with a plurality of points in said at least two trace data streams;

annotating said at least two trace data streams by outputting said at least two trace data streams together with said reference timestamp data associated with said points in said at least two data streams to provide temporal correlation between said at least two trace data sources;

and

generating, via each of said trace data sources, local timestamp data associated with said plurality of points in said trace data streams.

16. (original) A method as claimed in claim 15, wherein said annotation comprises outputting each of said at least two trace data streams and a distinct data stream comprising said reference timestamp data.

17. (original) A method as claimed in claim 15, wherein said annotation comprises inserting said reference timestamp data into at least one of said at least two trace data streams to generate a respective individual annotated trace data stream.

18. (original) A method as claimed in claim 15, wherein said trace data streams from said at least two trace data sources are cycle-accurate trace data streams.

SWAINE et al
Appl. No. 10/635,916
February 17, 2006

19. (cancelled).

20. (original) A method as claimed in claim 19, wherein said annotation comprises outputting said local timestamp data together with said reference timestamp data and said trace data streams.

21. (original) A method as claimed in claim 15, comprising the step of outputting, via at least one of said trace data sources, a marker packet at a marker point in the corresponding trace data stream and sending a request to a reference timestamp generator to output reference timestamp data associated with said marker point.

22. (original) A method as claimed in claim 21, wherein said marker packet comprises a trace source identifying signal that identifies the associated trace data source.

23. (original) A method as claimed in claim 21, wherein said marker packet comprises local timestamp data from the respective trace data source and corresponding to said marker point.

24. (original) A method as claimed in claim 15, comprising the step of combining said trace data streams and said reference timestamp data for output to a trace data stream processor.

25. (original) A method as claimed in claim 15, wherein said step of generating said at least two trace data streams comprises using a software triggered trace data generator to trigger

SWAINE et al
Appl. No. 10/635,916
February 17, 2006

BEST AVAILABLE COPY

generation of a trace data stream using a software-controlled write to one or more predetermined memory locations.

26. (original) A method according to claim 15, wherein at least one of said trace data sources includes:

- a processor core;
- a digital signal processor; and
- a memory bus monitor.

27. (original) A method as claimed in claim 15, wherein said method is performed upon an integrated circuit.

28. (currently amended) A computer program product comprising a computer readable medium containing computer readable instructions that when executed~~carrying a computer program for controlling~~ control a data processing apparatus to analyse at least two annotated trace data streams comprising trace data together with reference timestamp data and local timestamp data associated with a plurality of points within said at least two data streams, said computer program product comprising:

trace data processing code for performing temporal correlation between said points in said at least two trace data streams using said reference timestamp data and said local timestamp data.

SWAINE et al
Appl. No. 10/635,916
February 17, 2006

29. (previously presented) A computer program product as claimed in claim 28, wherein said trace data processing code performs temporal correlation between two trace events from different trace data streams.

30. (previously presented) A computer program product as claimed in claim 28, wherein said trace data processing code performs an interpolation between two of said points in a given one of said at least two trace data streams.